

What is claimed is:

1. An image forming apparatus comprising:
an image carrier on which a toner image is to be formed; and

a recording medium support member configured to convey the recording medium, carrying the toner image thereon, in cooperation with said image carrier;

wherein said image carrier and said recording medium support member are driven such that a surface of said image carrier and a surface of said recording medium support member move in a same direction as each other, as seen at a contact position where the surfaces face each other via the recording medium, and

an electric field, forcing the toner image toward said image carrier, and an electric field, forcing said toner image toward the recording medium, are formed between the surface of said image carrier and the surface of said recording medium at positions upstream and downstream, respectively, of the contact position in a direction of movement of said recording medium.

2. The apparatus as claimed in claim 1, further comprising:

a first voltage applying device configured to apply a voltage identical in polarity with the toner to part of a reverse surface of said recording medium support member

upstream of the contact position; and

a second voltage applying device configured to apply a voltage opposite in polarity to the toner to part of the reverse surface of said recording medium support member positioned at or downstream of the contact position in the direction of movement of the recording medium.

3. The apparatus as claimed in claim 2, wherein said recording medium support member comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device comprise rollers.

4. The apparatus as claimed in claim 2, wherein said recording medium support member comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device each comprise a brush.

5. The apparatus as claimed in claim 2, wherein said recording medium support member comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device each comprise a blade.

6. The apparatus as claimed in claim 2, wherein said recording medium support member comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device

comprise a combination of two of a roller, a brush and a blade.

7. The apparatus as claimed in claim 1, further comprising a voltage applying device interposed between the surface of said image carrier and the surface of the recording medium at a position upstream of the contact position in the direction of movement of the surface of said image carrier for applying a voltage identical in polarity with the toner.

8. The apparatus as claimed in claim 1, further comprising a charge applying device configured to apply a charge identical in polarity with the toner to the surface of the recording medium at a position upstream of a contact position where the surface of said image carrier and said surface of said recording medium contact each other.

9. The apparatus as claimed in claim 8, wherein said charge applying device comprises a roller.

10. The apparatus as claimed in claim 8, wherein said charge applying device comprises a brush.

11. The apparatus as claimed in claim 8, wherein said charge applying device comprises a blade.

12. The apparatus as claimed in claim 8, wherein said charge applying device comprises a corona charger.

13. The apparatus as claimed in claim 8, wherein said charge applying device bifunctions as a registration

roller configured to convey the recording medium toward the contact position.

14. The apparatus as claimed in claim 1, wherein said image carrier comprises an intermediate image transfer body to which toner images are sequentially transferred one above the other to complete a composite image.

15. The apparatus as claimed in claim 14, further comprising:

a first voltage applying device configured to apply a voltage opposite in polarity to the toner to part of a reverse surface of said intermediate image transfer body upstream of a contact position where said intermediate image transfer body and the recording medium contact each other in a direction of movement of a surface of said intermediate image transfer body; and

a second voltage applying device configured to apply a voltage identical in polarity to the toner to part of the reverse surface of said intermediate image transfer body positioned at or downstream of the contact position in the direction of movement of said surface.

16. The apparatus as claimed in claim 15, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device comprise rollers.

17. The apparatus as claimed in claim 15, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device each comprise a brush.

18. The apparatus as claimed in claim 15, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device each comprise a blade.

19. The apparatus as claimed in claim 15, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying device and said second voltage applying device comprise a combination of two of a roller, a brush and a blade.

20. An image forming apparatus comprising:

image carrier means on which a toner image is to be formed; and

recording medium support means for conveying the recording medium, carrying the toner image thereon, in cooperation with said image carrier means;

wherein said image carrier means and said recording medium support means are driven such that a surface of said image carrier means and a surface of said recording medium

support means move in a same direction as each other, as seen at a contact position where the surfaces face each other via the recording medium, and

an electric field, forcing the toner image toward said image carrier means, and an electric field, forcing said toner image toward the recording medium, are formed between the surface of said image carrier means and the surface of said recording medium at positions upstream and downstream, respectively, of the contact position in a direction of movement of said recording medium.

21. The apparatus as claimed in claim 20, further comprising:

first voltage applying means for applying a voltage identical in polarity with the toner to part of a reverse surface of said recording medium support means upstream of the contact position; and

second voltage applying means for applying a voltage opposite in polarity to the toner to part of the reverse surface of said recording medium support means positioned at or downstream of the contact position in the direction of movement of the recording medium.

22. The apparatus as claimed in claim 21, wherein said recording medium support means comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means

comprise rollers.

23. The apparatus as claimed in claim 21, wherein said recording medium support means comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means each comprise a brush.

24. The apparatus as claimed in claim 21, wherein said recording medium support means comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means each comprise a blade.

25. The apparatus as claimed in claim 21, wherein said recording medium support means comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means comprise a combination of two of a roller, a brush and a blade.

26. The apparatus as claimed in claim 21, further comprising voltage applying means interposed between the surface of said image carrier means and the surface of the recording medium at a position upstream of the contact position in the direction of movement of the surface of said image carrier means for applying a voltage identical in polarity with the toner.

27. The apparatus as claimed in claim 20, further

comprising charge applying means for applying a charge identical in polarity with the toner to the surface of the recording medium at a position upstream of a contact position where the surface of said image carrier means and said surface of said recording medium contact each other.

28. The apparatus as claimed in claim 27, wherein said charge applying means comprises a roller.

29. The apparatus as claimed in claim 27, wherein said charge applying means comprises a brush.

30. The apparatus as claimed in claim 27, wherein said charge applying means comprises a blade.

31. The apparatus as claimed in claim 27, wherein said charge applying means comprises a corona charger.

32. The apparatus as claimed in claim 27, wherein said charge applying means bifunctions as a registration roller configured to convey the recording medium toward the contact position.

33. The apparatus as claimed in claim 20, wherein said image carrier means comprises an intermediate image transfer body to which toner images are sequentially transferred one above the other to complete a composite image.

34. The apparatus as claimed in claim 33, further comprising:

first voltage applying means for applying a voltage

opposite in polarity to the toner to part of a reverse surface of said intermediate image transfer body upstream of a contact position where said intermediate image transfer body and said recording medium support means contact each other in a direction of movement of a surface of said intermediate image transfer body; and

second voltage applying means for applying a voltage identical in polarity to the toner to part of the reverse surface of said intermediate image transfer body positioned at or downstream of the contact position in the direction of movement of said surface.

35. The apparatus as claimed in claim 34, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means comprise rollers.

36. The apparatus as claimed in claim 34, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means each comprise a brush.

37. The apparatus as claimed in claim 34, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means each

comprise a blade.

38. The apparatus as claimed in claim 34, wherein said intermediate image transfer body comprises a belt passed over a plurality of rollers, and said first voltage applying means and said second voltage applying means comprise a combination of two of a roller, a brush and a blade.

39. An image forming method comprising the steps of:
forming a toner image on an image carrier;
causing said image carrier and a recording medium support member to convey the recording medium, carrying the toner image thereon, by nipping said recording medium;
driving said image carrier and said recording medium support member such that a surface of said image carrier and a surface of said recording medium support member move in a same direction as each other, as seen at a contact position where the surfaces face each other via the recording medium; and

forming an electric field, which forces the toner image toward said image carrier, and an electric field, which forces said toner image toward the recording medium, between the surface of said image carrier and the surface of said recording medium at positions upstream and downstream, respectively, of the contact position in a direction of movement of said recording medium.